

# Gufkral 1981: An Aceramic Neolithic Site in the Kashmir Valley

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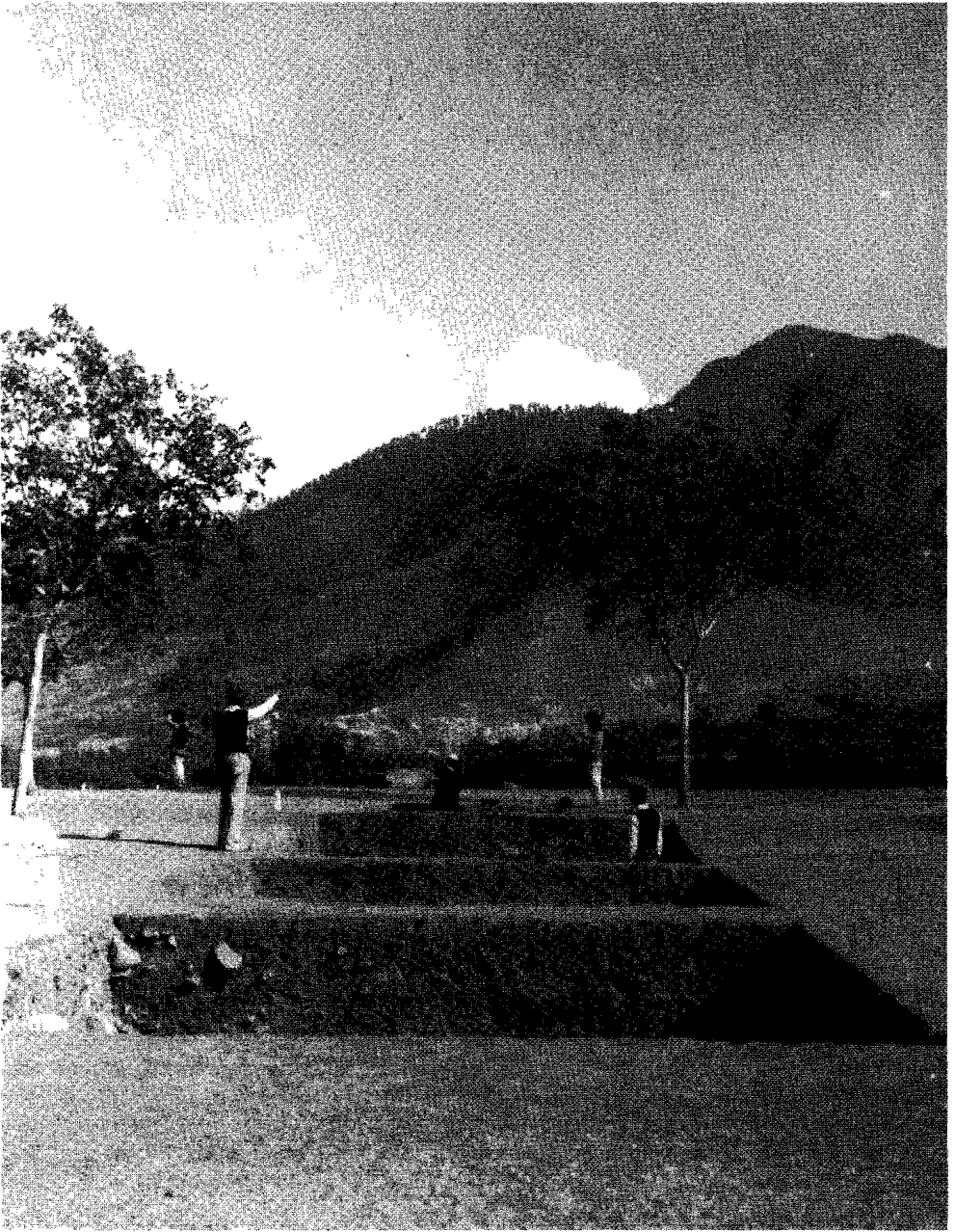
A. K. SHARMA

## THE SITE

GUFKRAL (literally *guf*-cave, *kral*-potter)—a site inhabited by potters who utilize the caves cut into the *karewa*—was excavated by the Prehistory Branch of the Archaeological Survey of India from 18 August to 20 October, 1981. On the slopes of the 35 m high mound, there are a number of caves, both single and multichambered with pillars. Some, particularly on the southeastern side, are occupied by Krals both for residential and storage purposes. Others, which are deserted, had their openings closed due to collapse of the earth. Inquiries so far have revealed that the oldest Kral, a centenarian, was born in one of these caves. It is proposed to undertake investigations of a few of these caves to ascertain their antiquity.

The site, Latitude 35°54' N, Longitude 75°60' E, is situated 41 km southeast of Srinagar near the Tahsil town of Tral in the Pulwama District of Jammu and Kashmir State. It can be approached by the Awantipur-Dodsar-Tral road. It is located on an extensive deposit of upper *karewa* adjacent to the village Ban-Mir between two *nallahs* that join Jhelum nearly 10 km to the west. At the top the mound measures 400 m long north-south and 75 m wide east-west (Pl. Ia). Maximum height of the mound from the road level on the western side is 35 m. In the exposures on the northern extension of the mound a thick deposit of conglomerate could be seen by cross bedded sand, light yellow slit, and *karewa*. The conglomerate is composed of limestone, trap, and quartzite with boulders.

On the eastern edge of the mound, almost in the center, are found a number of menhirs on the slope. None is in its original and upright position. A few have rolled down to the bottom of the mound and are used by the Krals for washing clothes.



Pl. 1a General view of the site

## GUFKRAL- 1981: DISTT. PULWAMA (J&amp;K)

## SECTION LOOKING SOUTH

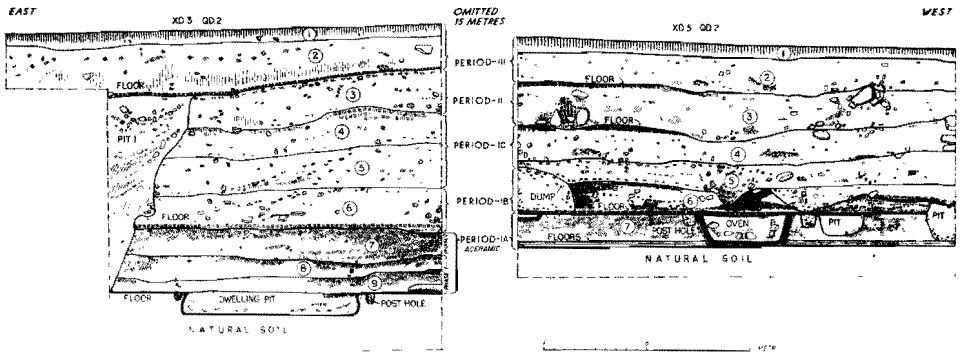


Fig. 1 Sections looking south

## CULTURE SEQUENCE

The site was explored in 1962–1963 by the Frontier Circle of the Archaeological Survey of India. The aim of this season's dig was to learn the culture sequence at the site, hence the dig was restricted to almost the center of the mound, where a maximum of 3.10 m of habitation deposit was encountered over the natural soil. On the northern side of the mound another 5 m of deposit was expected as indicated by rain gullies and side scrapings. Some scrapings were also made in the rain gullies that revealed oval and rectangular pits.

In all six quadrants, each measuring  $4.25 \times 4.25$  m were opened, out of which natural soil was reached in five (Fig. 1). One of the excavated quadrants was near one of the menhirs. The excavation revealed five periods of occupation:

Period IA	Aceramic Neolithic
Period IB	Early Neolithic
Period IC	Late Neolithic
Period II	Megalithic
Period III	Historical

Each period of occupation was clearly sealed by a floor of the subsequent period.

The most significant finds of this excavation were: (a) presence of a well-defined aceramic Neolithic level, the deposit varying from 35 cm to 1.10 m; (b) identification of cereal grains; and (c) faunal assemblage dominated by wild animals in the lower levels, slowly leading almost exclusively to domesticated animals in the middle and upper phase.

## DESCRIPTION BY PERIOD

*Period IA: Aceramic Neolithic*

The Aceramic Neolithic Period, having a deposit of 35 cm to 1.10 m, was sealed by a continuous floor of yellow compact clay mixed with "Chunam" running in all the

trenches. Two phases of occupation could be distinctly marked by the presence of two floor levels, one on the top of the natural soil and the other after a deposit of nearly 30-35 cm.

#### SETTLEMENT PATTERN

The settlement pattern consisted of large and small dwelling pits cut into the loessic deposits, being circular or oval in plan with narrow mouths and wide bottoms (Pl. Ib). They varied in diameter from 3.80 m to 1.50 m at the top. Large dwelling pits generally belonged to phase 1 and were only 20 to 30 cm deep, unlike dwelling pits at Burzahom which were very deep (up to 3.96 m). These pits were surrounded by storage pits and hearths. A number of postholes were noticed around the pits and the hearths to support the superstructure of grass and reed. Recovery of mud chunks with reed impressions indicates that most probably the bases of the superstructures were plastered with mud to give them strength and to prevent entry of water and snow from the sides. In phase 1, the floors of the dwelling pits and storage pits, all cut into the loessic deposit (top of natural soil) and their working levels in a wide area, were plastered with red ochre paste. Such treatment was not available in the floors belonging to phase 2. Some dwelling pits cut in phase 1 were subsequently enlarged and used in phase 2 also as indicated by the successive deposits inside these pits. In phase 2, two-chambered dwelling pits were also available and were deeper than their counterparts in phase 1.

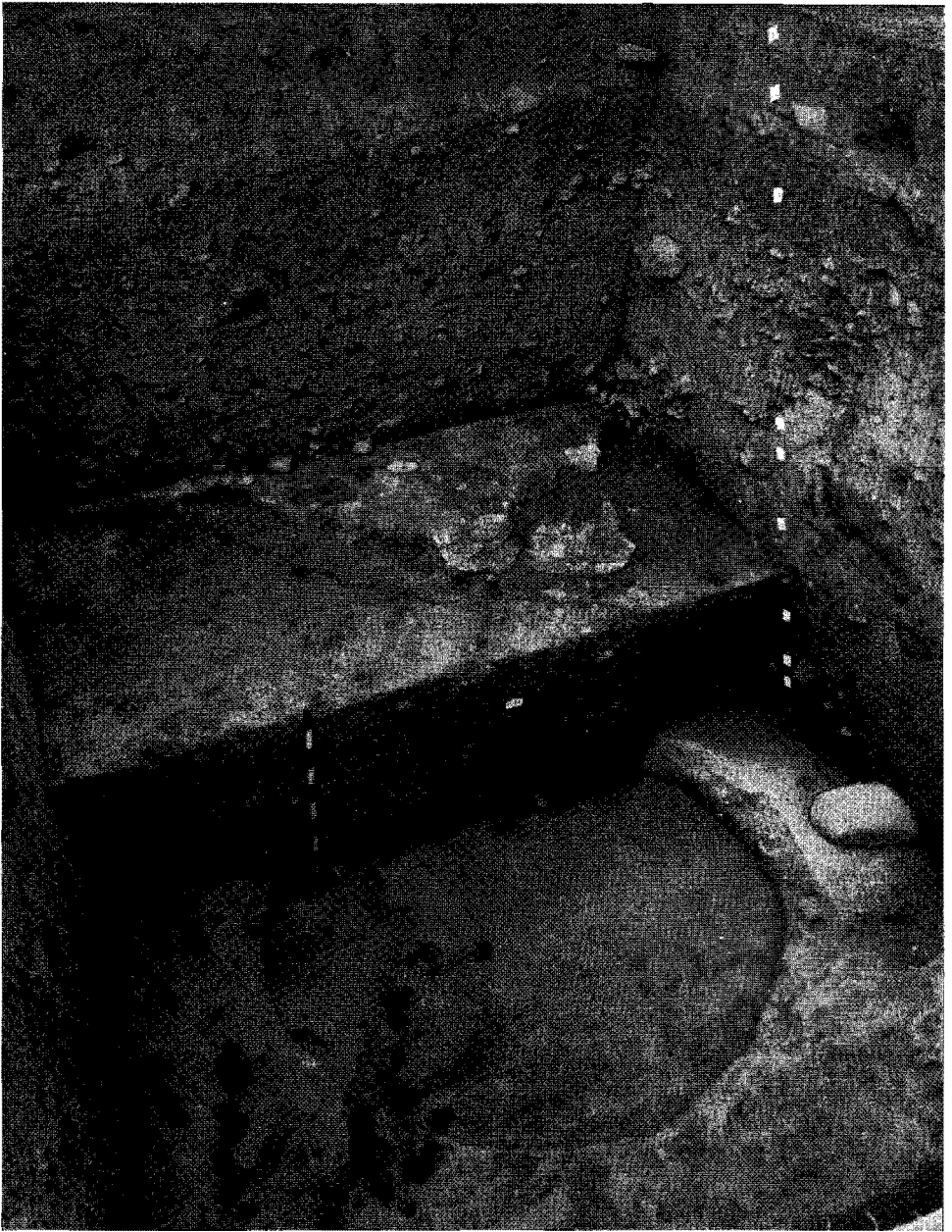
Hearths of phase 1 were rectangular, whereas in phase 2 both circular and rectangular hearths made of burnt clay were available. One of the circular hearths had its floor and sides plastered with mud. This circular hearth was 93 cm in (outer) diameter and 30 cm deep. It had postholes on its outer periphery. The presence of these postholes and the large quantity of ash from inside the hearth, along with pebbles, indicates that the animals hunted were roasted by hanging them over the fire in the hearth supported by the poles.

The maintenance of floors, covering a wide area around the pits, shows that people used to live outside during warm seasons and occupied dwelling pits in winter; roasting of food (both flesh and grains) was done only outside as no hearths or fireplaces were found inside the dwelling pits.

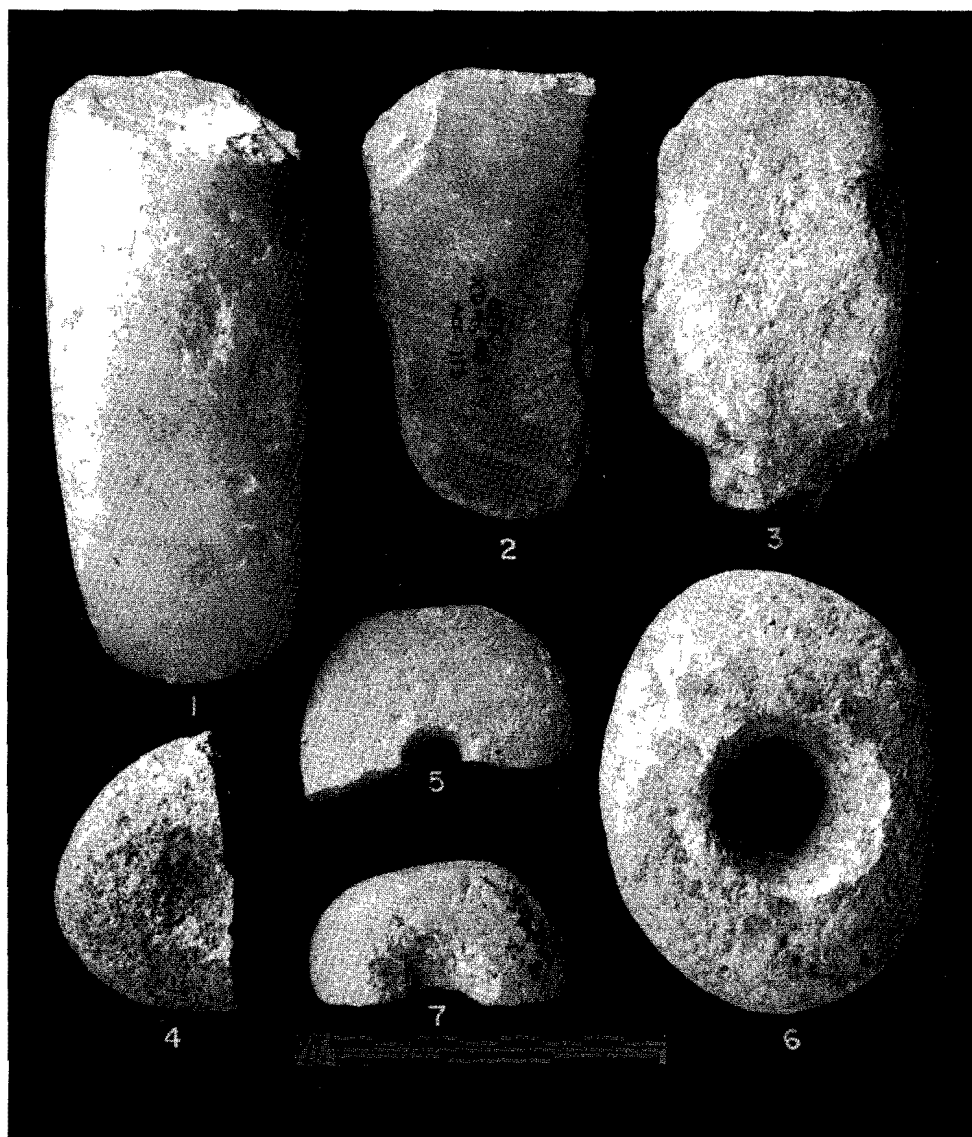
#### ARTIFACTS

Among the artifacts used by the settlers are polished stone celts, both finished and unfinished, stone points, with one and both ends sharp, made of Himalayan Trap; also, one broken unfinished ring stone (Pl. IIa), pounders and querns. A large quern with a depression on the working surface and showing red ochre paste adhered to it was recovered from the red ochre-treated floor near the dwelling pit in one of the trenches.

Twenty-seven bone tools, both polished throughout the body and only at the working tips, were recovered (Pl. IIb). They were shaped out of long bones, splinters, and horns. Most of these were points and arrowheads. Besides two awls, some piercers and scrapers were also recovered. Of special note, however, is a polished bone needle with a damaged eye. In the majority of the tools, tips had been charred to give the required strength to the working ends. Piercers were used for making incisions and for tearing open the flesh after the animal was killed and skinned; scrapers were used to scrape fat from the flesh. Bone tools were mostly made from the green bones, bones of sheep, goats, cervus, and ibex being generally preferred. Advantage was taken of the natural curves, depressions, and articulation ends of various parts to make different types of tools. Arrowheads were tiny like microliths with only their tips charred and polished. Among the ornaments recovered



Pl. 1b View showing dwelling pit and floor levels



Pl. IIa Period IA:—

1, 2 & 3—Finished and unfinished celts  
4—Unfinished ringstone

Period II:—

5, 6 & 7—Ringstones



Pl. IIb Bone tools from Period IA

were one cylindrical, highly polished spacer bone bead and two steatite beads, one cylindrical and another barrel-shaped. A piece of a terracotta marble was also recovered (Pl. IIIa).

#### ANIMAL REMAINS

The animal remains amply demonstrated that in the Aceramic Neolithic period at Gufkral, people were predominantly dependent on wild game. Domestication of a selected variety was just being introduced. The animals represented were wild sheep (*Ovis orientalis*), wild goat (*Capra aegagrus*), wild cattle (*Bos namadicus*), red deer (*Cervus elephus*), wolf (*Canis lupus*), Himalayan ibex (*Capra ibex*) and bear (*Ursus*) (Fig. 2). Sheep (*Ovis aries*) and goat (*Capra hircus*) were the only animals being domesticated and formed 5 and 3 percent of the total assemblage, respectively.

With the exception of *Canis lupus*, all the animals hunted were herbivorous. This is possibly due to the fact that these animals were easily available in the surrounding hills and slopes.

*Ovis*, *Capra*, *Bos*, and *Cervus* formed the largest percentage of animals hunted, *Ovis* dominating over all. Specimens indicate that cattle and goats were large, well-built animals, whereas the sheep were of a smaller size.

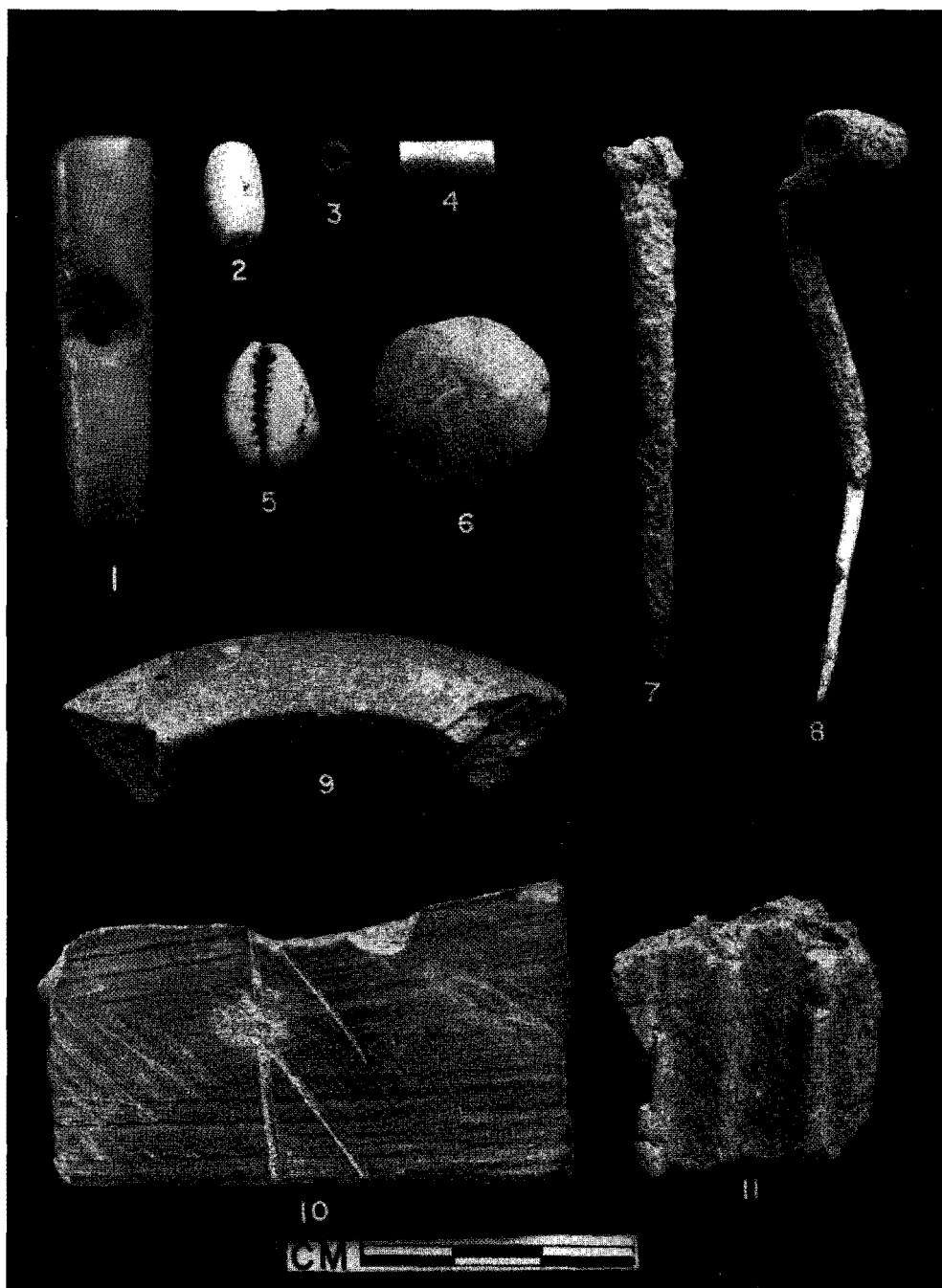
#### GRAINS

Evidence of grains obtained by floatation technique by Dr. M. D. Kajale, of Deccan College, Postgraduate and Research Institute, Pune, indicates that in this period people had already realized the importance of grains for food and were either collecting and/or had started cultivation in a limited area. The second possibility is remote as, so far, no harvesters and good specimens of ring stones have been recovered from this period. However, detailed examination of the grains recovered is underway and may throw some light on the species. But one thing is certain. In the Kashmir Valley wheat, barley, and lentils had a much earlier antiquity than did rice, which is the staple food of Kashmiris in the Valley today and which is grown extensively all over the Valley. Wheat, barley, and lentils are at present cultivated in a very limited area and became common only in recent times with the arrival of Sikhs from the outside. It will be interesting to investigate when and why the earlier grains almost totally disappeared from the Valley and were replaced by rice. What were the circumstances that led to the total change in the food habits of the people of the Valley? Was rice introduced with the arrival of a new wave of people? Positive evidence in this direction is available from the excavation as rice was recovered from Period II, which is marked with the arrival of Megaliths at the site and could be safely dated to c. 1000 B.C. pending  $^{14}\text{C}$  tests. The following grains were recovered from the Aceramic Period: (i) *Hordeum vulgare* Linn—six row barley; (ii) *Triticum* sp.—wheat; (iii) *Lens esculenta* Moonch—Lentil, Masur and (iv) *Lithospermum arvense*—a weedy plant. (See Postscript for  $^{14}\text{C}$  dates.)

#### Period IB

The Aceramic Neolithic Period IA was followed, without any break, by the Neolithic Period IB. This period is represented by a nearly 40 cm thick deposit and yielded a large quantity of charcoal. Handmade Neolithic pottery made its appearance in this period; an overwhelming percentage was of grey ware with a few sherds of rough dull red ware. The shapes represented were big jars, bowls, basins, and one stem piece of dish-on-stand in





Pl. IIIa Period IA:—

- 1—Bone spacer bead
- 2 & 4—Paste beads
- 6—Terracotta marble
- 11—Clay with reed impression

Period IC:—

- 8—Copper hair pin
- 9—Terracotta bangle
- 10—Pot sherd with graffitti

Period II:—

- 3—Wooden bead
- 5—Cowrie
- 7—Copper pin

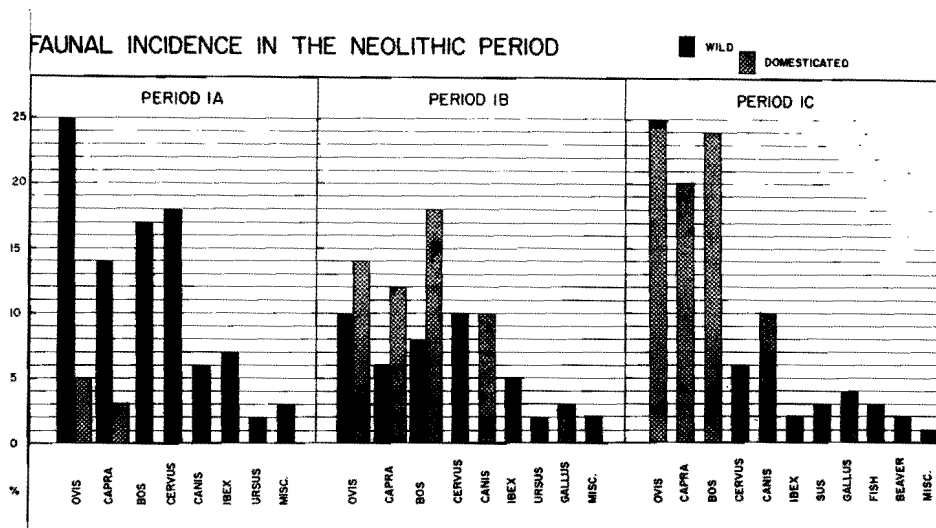


Fig. 2 Faunal incidence in the Neolithic Period

coarse dull red ware. The decorations included mat impressed bases, pinched designs on the neck region and reed impression only on exterior and also both on exterior and interior of the pots (Pl. IIIb). Pottery was mostly incompletely oxidized.

#### SETTLEMENT PATTERN

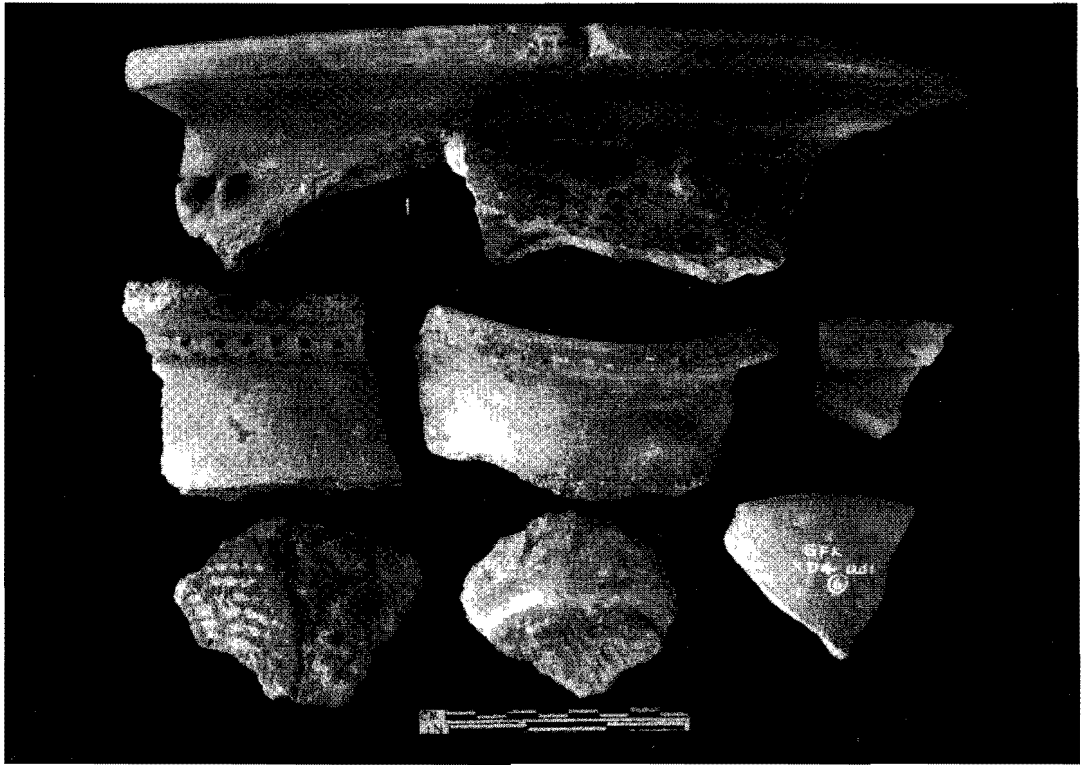
Settlement pattern of this period was indicated by the presence of a 5 to 7 cm thick floor made of yellow compact clay mixed with "Chunam" running throughout in almost all the trenches. At some places this floor was repaired at least five to six times. The most important building activity of this period was the construction of mud and rubble walls. Parallel with the mud and rubble walls, another wall-like structure was sometimes encountered. This wall-like structure was made of mud mixed with "Chunam" and was uniformly 70 cm wide and separated from the mud and rubble wall by the same amount of space. The real significance of this structure will be clear only after it is fully exposed. The total disappearance of dwelling pits from this period shows that the settlement pattern had completely changed with the introduction of pottery. People had now started construction of mud and rubble walls.

The period was also characterized by extensive burning activity. From one of the trenches a huge quantity of charcoal and charred wood pieces were recovered. Stored wooden logs may have burned or one of the residential portions was destroyed by fire.

The artifacts of the period included only one stone point, one broken ring stone, and 19 bone tools (mostly well-polished points, two piercers cum scrapers shaped out of splinters, and one spatula).

#### ANIMAL REMAINS AND GRAINS

The period was marked by a sudden spurt in the domestication of animals such as sheep, goats and cattle. Sheep and goats still dominated the scene with the size of the goats becoming smaller. Wild sheep, goats, and cattle continued to be hunted but less than before. The percentage of dog bones increased with a marked reduction in the percentage of wolf bones. Short-horned cattle were present. The presence of bones of red deer, ibex,



Pl. IIIb Pottery from Period IB (1 from Period IC)

and bear indicates that hunting was still the main source of food. Many of the pieces bore sharp cut marks. In the long bones holes were carefully cut to extract the bone marrow. Domestic fowl (*Gallus*) was added to the menu (Fig. 2).

While cutting the animals to pieces care was taken to retain large pieces of bone which could be used for shaping tools. This is supported by the fact that the percentage of tiny splinters recovered was much less as compared to other places excavated. Apart from all the grains of Period IA continuing, the common pea (*Pisum arvense* Linn.) was added. (See Postscript for  $^{14}\text{C}$  dates.)

### *Period IC*

Period IC, belonging to the mature phase of the Neolithic Period, was represented by a 70–80 cm thick habitational deposit and was sealed by a thick whitish floor throughout. It was also characterized by the presence of large number of refuse pits and dumps.

Pottery consisted of grey ware, burnished grey ware, and rough thick dull red ware, along with the introduction of black burnished ware and wheel-turned black burnished ware. A few examples of red gritty ware were also found. All the shapes of Period IB continued and long-necked jars were introduced. The dish-on-stand with triangular perforated designs on the stem region on grey burnished ware was also introduced. Decorations included mat and cord impressed bases, reed impression to create roughened surface

on grey and dull red ware, pinched designs on the neck region and incised oblique designs in the neck region in dull red ware, knobbed designs on the neck region of the wheel-made black burnished ware (Pl. IIIc). A sherd with graffiti was also recovered.

#### ARTIFACTS

Stone objects were scarce. Only one unfinished stone celt was found. Stone points, which had almost disappeared in Period IB, appeared again in good number (14). Other stone objects included querns, pounders, and balls. Double-holed harvesters—one having incised decoration on one side (Pl. IVa)—and spindle whorls on stone and pottery were the important objects that appeared in this period. Spindle whorls having large holes indicate the start of spinning of thick threads for woolen garments.

One stone engraver used by potters for removing extra clay while finally shaping the pot before drying was also recovered. Other cultural assemblages included terracotta bangles, potsherds with graffiti marks, and terracotta with relief designs. Of special significance was the recovery of a copper hair pin with flattened coiled head from the upper levels of this period, similar to one found at Chanhudaro (Pl. IIIa). This artifact may point to some foreign contacts.

The period yielded the largest number (41) of bone tools, most of which were well-polished points; the majority had been shaped out of splinters. The tips were generally charred and sharp, particularly in the case of micro tools as arrowheads. A few awls, one spatula, and a harpoon were other tools represented. A bone object with four oblique incised grooves was also found.

#### ANIMAL REMAINS AND GRAINS

By this time the domestication of animals was fully achieved. Herds of sheep (*Ovis aries*), goats (*Capra hircus*), and cattle (*Bos indicus*) were domesticated. The size of these herds was considerably reduced. Sheep and goats continued to dominate the percentage of animals. The number of dogs increased. Two important new species, namely pig (*Sus scrofa*) and fish, made their appearance. Bones of hare (*Lepus*), hedgehog, rodents, and beaver were also recovered (Fig. 2).

All the grains found in Period IB were also recovered from Period IC.

Complete domestication of animals, and the advent of harvesters and spindle whorls indicated that by this time the Neolithic people at Gufkral had adopted a well-settled life where the practice of agriculture, cattle breeding and herding, and weaving of woolen cloth became the way of life. Hunting was now restricted to red deer and ibex on a limited scale as the percentage of these animals had become considerably reduced. Contacts with the outside world had also begun. (See Postscript for <sup>14</sup>C date.)

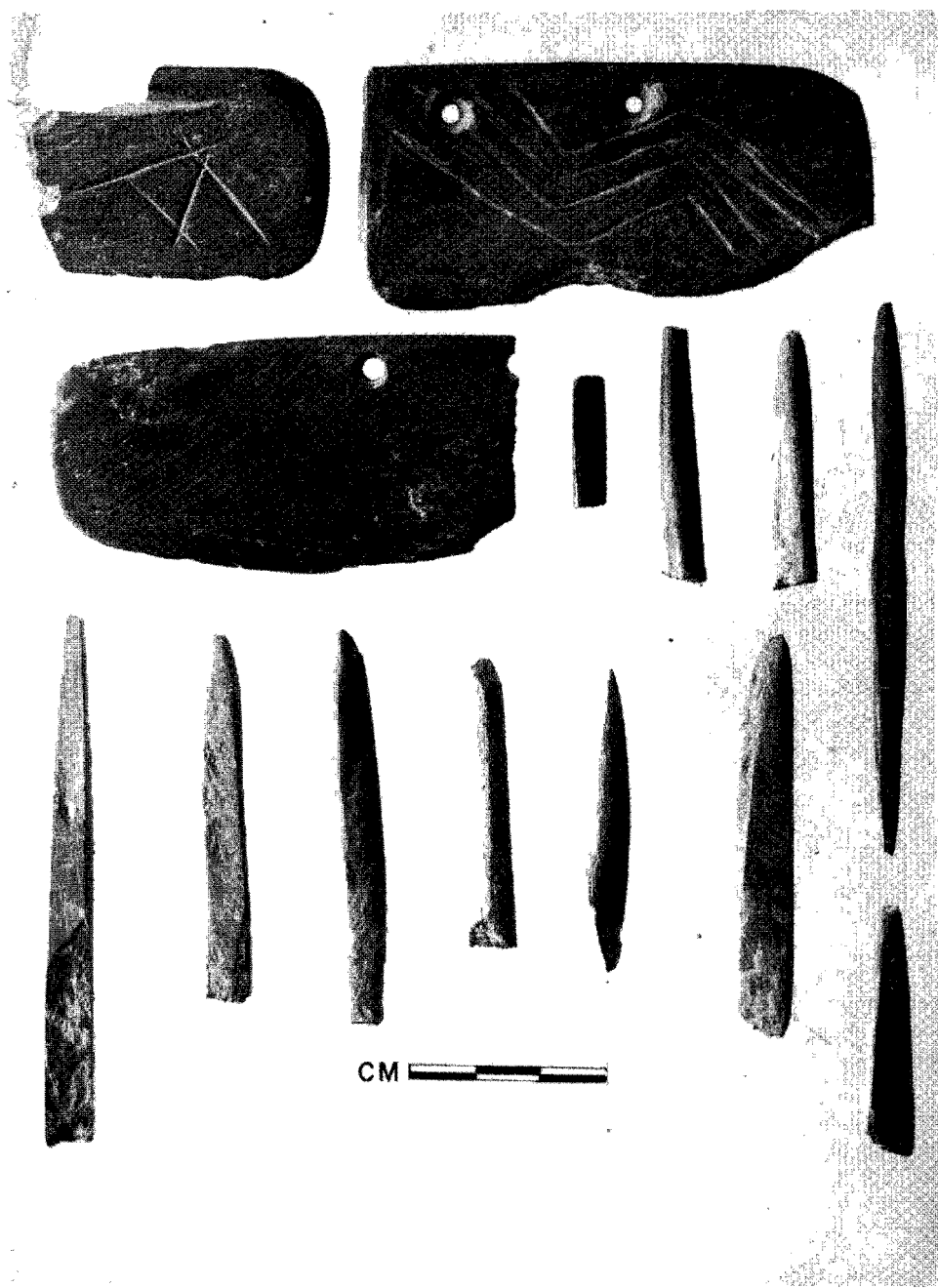
### Period II

Period II, which is associated with the arrival of menhirs on the site, has been designated as the Megalithic Period. It is represented by a habitation deposit nearly 50–60 cm thick. In one of the quadrants near a fallen menhir a pit cut in layer 3, containing a large quantity of packing material comprising broken pebbles, was exposed. Since no menhirs are standing and as huge quantities of broken pebbles are littered over the site, concentrated mostly near the menhirs, it appears that the menhirs did not have very deep foundation pits and that they arrived much later. But this needs to be checked further.

The period was marked by the presence of a nearly 10 cm thick floor running through-



Pl. IIIc Pottery from Period IC



Pl. IVa Harvesters and stone points from Period IC

out, with few breaks due to pit activities. The period also witnessed considerable pit activities. A number of refuge pits sinking down to the natural soil were cut. From these pits large quantities of pottery and animal bones were recovered.

Burnished grey ware, gritty red ware, and thick dull red ware continued from the previous period but the percentage of thick dull red ware and wheel-made pottery increased. Wheel-made dull red ware made its appearance. Shapes included jars with shapeless rims, long-necked jars, bowls, basins, dish-on-stand and medium-sized globular jars. Pinched designs in the neck region, incised designs, and combed surfaces obtained by brushing with straw and reeds were available. Vessels with channeled spouts were introduced.

Many large ring stones, both finished and unfinished, were recovered (Pl. IIa). Stone points had almost disappeared. Other artifacts included a copper point, a wooden bead, pestles, spindle-whorls with medium-sized holes, and a miniature pot. The only cowrie shell found was from this period (Pl. IIIa).

The bone tool industry was neglected; only 20 tools were recovered and they were not well polished. New innovations were bone handles shaped mostly from the tibia of sheep/goats to take advantage of the shape and bone marrow sockets. These handles were meant to hold smaller tools for easy operation. A fine cobbler's awl was also recovered.

All the grains of earlier periods continued. Rice (*Oryza sativa* Linn.) and millet (*Eleusine coracana*) were introduced towards the end of this period.

Animals represented were cattle, sheep, goats, dogs, pigs, ibex, and fowl. It appeared that hunting had almost come to a close as only ibex bones were recovered. This animal was probably hunted or captured for the sake of its horns. The percentage of sheep and goats continued to be higher than that of cattle.

### Period III

Period III represents the historical occupation on the site. A thick compact floor made of whitish clay was running almost throughout, sealing the Megalithic period. The limited excavation has not yielded any structures except floor levels so far; but in the exposed areas in other parts of the mound, thick rubble walls could be noticed.

Handmade pottery continued but was dominated by wheel-made thin bright red ware. Shapes encountered were jars, bowls, miniature pots, lamps, vases, dishes of Harapham shape, knobbed lids, lids with bowls, double-rimmed pots, and cup-on-stand. A few sherds of black-painted red ware with stamped designs were collected. Stone bowls were also found. The artifacts included crude bone tools, mostly points, one fine polished bone handle (Pl. IVb), ring stones, pounders, a few stone points, and a huge terracotta circular disc (that appears to be a halo on the back of the head of an image).

Iron was introduced in this period. All the grains of the previous period continued with definite evidence of rice (*Oryza sativa* Linn.) from the lower levels of this period.

Animal bones recovered were identified as those of cattle, sheep, goats, dogs, pigs, cats, fowl, and rodents.

### SUMMARY

Excavations at Gufkral have brought to light five periods of occupation from the Aceramic Neolithic to the Historical Period. For the first time it has been firmly es-



Pl. IVb Bone tools from Period III

tablished that in the Kashmir Valley there was also an Aceramic Neolithic Period before pottery was introduced. It is in this period that the process of domestication of selected species of animals was attempted. People also recognized the food value of various grains as wheat and barley and had started collecting them. Bone and stone tools were manufactured. People lived in the open and in huts with floors sunk into the loessic deposits in order to protect the dwellers from gusty freezing winds. They kept the floors tidy and beautiful by painting them with red-ochre. Their main occupation was hunting.

In Period IB handmade ceramics were introduced. People started manufacturing jars, bowls, basins, and so forth in grey ware and rough dull red ware. There was a change in the settlement pattern. Pits were discarded and mud and rubble walls were constructed. Well-polished bone tools were made. There was a sudden spurt in the domestication of animals.



By Period IC the Neolithic culture had reached the mature stage. Thick whitish floors with "Chunam" mixed earth were laid in houses. There was now more variety in wares and in their decoration. A large number and variety of well-polished bone tools were made. People depended less on larger stone objects. Agriculture was fully established. Weaving of woollen cloth had started. With the domestication of animals and with agriculture fully achieved, hunting activities declined. People now had spare time to manufacture ornaments, toy pots, and other items.

Period II at Gufkral was marked by the arrival of menhirs. It is yet to be ascertained whether the same people practiced the cult of erecting huge memorial stones or if a new wave of people had arrived on the site and started living with the original neolithic settlers. With the menhir phase came wheel-made dull red ware, vessels with channeled spouts, copper objects, spindle whorls with medium-sized holes, rice, and millet. The bone tool industry was neglected but bone handles were manufactured.

Period III represents the historical phase with wheel-made thin bright red ware of jars, bowls, cups-on-stand, and lids with bowls. Stamped designs and black on red paintings were introduced. Iron reached the site with this period.

One season's limited dig at Gufkral has filled some of the gaps in the cultural sequence of Kashmir and has definitely pushed back the antiquity of the Neolithic Culture in the Valley. The earliest  $^{14}\text{C}$  date for Period I at Burzahom is  $2375 \pm 120$  B.C. [lab and half life used not reported, editor]. The Aceramic Neolithic Period at Gufkral is likely to go back by 400 to 500 years earlier as even in Period IB at Gufkral the technique of manufacture of bone tools indicated an earlier phase than the bone tools of Period I at Burzahom which are well polished. From the size of the mound it appeared that Gufkral might reveal a fairly vast settlement.

## ACKNOWLEDGEMENTS

Excavations at Gufkral were undertaken with the help of Dr. D. Mitra, Director General and Shri J. P. Joshi, Director (Exploration), Archaeological Survey of India. Dr. K. D. Banerjee, Superintending Archaeologist, was the guiding force behind the project. To them I am grateful. I am also grateful to Miss Madhu Bala for analyzing the pottery. My thanks are due to S/Shri J. R. Batra, S. S. Gupta, K. V. Ramanrao, J. S. Dubey, S. S. Biswas, A. J. Nambhiraju, B. R. Rajput, S. Chatterjee, Chotelal Yadav, and K. S. Venkatramiah who toiled under difficult conditions to make the excavation a success. My thanks are due to Shri John of the Temple Survey Project (North) Bhopal without whose ungrudging assistance it would have been difficult to stay and conduct the excavations. For the final typescript I am thankful to Ku. Jayshree Baokar and V. Balasubramanian.

## POSTSCRIPT

### *Radiocarbon Dates*

Radiocarbon dates<sup>1</sup> presented below were determined at the Birbal Sahni Institute of Palaeobotany, Lucknow. The dates are based on radiocarbon half life value of  $5730 \pm 40$  years.

<sup>1</sup> Determination was done by Shri G. Rajgopalan of the BSIP.

*Jammu and Kashmir*

BS-358, Aceramic Neolithic level; Period IA, wood charcoal; depth 1.80 m Sample no. GFK/4/81 <sup>2</sup>	3130 $\pm$ 100 B.P.
BS-359, Neolithic level; Period IB, wood charcoal; depth 1.65 m Sample no. GFK/7/81	3980 $\pm$ 120 B.P.
BS-356, Neolithic level; Period IB, wood charcoal; depth 1.65 m Sample no. GFK/2/81	3570 $\pm$ 110 B.P.
BS-357, Neolithic level; Period IB, wood charcoal; depth 1.70 m Sample no. GFK/3/81	3470 $\pm$ 110 B.P.
BS-371, Neolithic level; Period IC; wood charcoal; depth 1.15 m Sample no. GFK/1/81	3570 $\pm$ 100 B.P.
BS-360, Neolithic level; Period IC, wood charcoal; depth 1.35 m Sample no. GFK/5/81	3340 $\pm$ 100 B.P.
BS-370, Neolithic level; Period IC; wood charcoal; depth 1.50 m Sample no. GFK/6/81	2790 $\pm$ 110 B.P.

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<sup>2</sup> Samples submitted by the Archaeological Survey of India.

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